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# SERENDIPITY:
# WHY SOME ORGANIZATIONS ARE LUCKIER THAN OTHERS [1]

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## ABSTRACT

Serendipity refers to the accidental discovery of something valuable. It is sometimes presented as an element of organizational learning but has been the object of scarce research. In this paper, I discuss the notion of serendipity in the organizational context, and elaborate a model of organizational serendipity. Four building blocks are considered: the conditions that facilitate serendipitous discovery, the search for a solution for a given problem, a process of bisociation leading to the combination of previously unrelated skills or information, and the discovery of an unexpected solution to a different problem. I also discuss what organizations can do to improve the chances of serendipity.


KEYWORDS: serendipity, search, bisociation, chance, accidental discoveries, unintentional learning

In his essay on serendipity, Umberto Eco remarks that “a number of ideas that today we consider false actually changed the world (sometimes for the better, sometimes for the worse) and how, in the best instances, false beliefs and discoveries totally without credibility could then lead to the discovery of something true (or at least something that we consider true today). In the field of the sciences, this mechanism is known as serendipity” (Eco, 1999, p.viii). Considering the repercussions enunciated by the author, the study of serendipity in the organizational context may be worth the effort.

The word “serendipity” was coined by the English novelist Horace Walpole, in a letter to a friend, the British diplomat Horace Mann, in January 28, 1754 (Remer, 1965). Inspired by an old exotic tale told of the ancient princes of Sri Lanka, then known as Serendip, Walpole mentioned a special type of luck, serendipity, which resulted from the combination of a happy accident with sagacity, or perspicacity in understanding. Walpole, as a child, read the “The Three Princes of Serendip”, first published in Europe in 1557, by a Venetian, Michele Tramezzino, and later translated to other languages.

There are many examples of the value of serendipitous findings. Columbus was looking for a new trade route to the Orient when, in 1492, he unexpectedly came upon the Americas. Sir Alexander Fleming was conducting research on influenza when, in 1922, he discovered penicillin. In the early 1950s, George de Mestral was returning home after a walk in the countryside in Switzerland, when he noticed that his coat was covered with cockleburs. As he tried to pick them off, he wondered about why they were so sticky. He used a microscope to discover that cockleburs are covered with hooks that became embedded in the loops of the fabric of his jacket. His knowledge the

cockleburs spawned the product known as Velcro, a word derived from velvet and crochet. It is important to note that these accidental discoveries have not been fortuitous. Columbus discovered America because he was looking for the Orient. Fleming discovered penicillin because of his research on influenza. De Mestral invented Velcro because he was curious about the cockleburs and decided to investigate them. All these accidental discoveries suggest that serendipity involves prepared, curious and open-minded people that act to find something.

In this paper, I study serendipity as one of the ingredients of organizational exploration and unintentional learning. Occasional mentions of the concept appear in the literature but systematic analyses of organizational serendipity are scarce. The paper is, thus, an attempt to contribute to a better understanding of serendipitous organizational phenomena. Serendipitous discoveries and accidental processes have been discussed in several fields of the social sciences, namely economics (Landes, 1994), information studies (Foster and Ford, 2003), history (Delgadillo and Lynch, 1999), ethnographic research (Fine and Deegan, 1996), etc. I suggest that the concept may also be interesting to organizational researchers and propose several extensions of the research to the field of management.

## WHAT IS ORGANIZATIONAL SERENDIPITY?

Serendipity refers to the accidental discovery of something valuable. Denrell, Fang and Winter defined it as “effort and luck joined by alertness and flexibility” (2003, p.978). It is not an unknown notion to organization and management scholars. However, the prevalence of the mechanistic metaphor in organizational theories, with its emphasis on order, predictability and regularity, minimized scholarly interest for the processes that

deviate the organization from the path of certainty. As Tsoukas (2004) put it, scholars devoted more attention to formal organizations than to the broader phenomenon of organization. Some authors, however, looked at organizations from different angles, for example from the logic of disorder (Warglien and Masuch, 1995). A logic of disorder does not mean that organizations become irrational or incoherent but rather that there is an element of unpredictability and emergence in the fabric of complex systems that needs to be considered. This logic may be found in Cohen, March and Olsen's (1972) work on garbage can type decision making, which advocated the role of chance, luck and timing in organizational choice. In this model, choice occurs through the accidental confluence of problems, solutions, participants and problems. Other authors also contributed to the analysis of luck and accident in organizational life. Olsen (1976) referred to organizations characterized by a lack of shared and consistent goals, clear technology and member participation, as "organized anarchies". Pascale's (1984) work on Honda's entry in the American market is a classic example of unexpected discovery or of a "disorganized logic".

To articulate the notion of serendipity with existing research, one can consider March's (1991) work on exploration and exploitation in organizational learning. The author pointed out that exploration refers to "experimentation ... in hopes of finding alternatives that improve on old ones. It thrives on serendipity, risk taking, novelty, free association, madness, loose discipline, and relaxed control." Therefore, serendipity can be presented as an unintentional outcome of exploratory learning efforts. Despite its sometimes ostensible presence in the domains of management theory and practice, the process is still under-researched. This may be the result of people's aversiveness to unpredictability and uncontrollability: we tend to seek order and meaning in our lives,

and the acknowledgment of our inability to predict and control events of some importance may be highly unsettling (Bandura, 1998). Chance, luck and happenstance, however, may be as relevant in organizational life as in other life domains. For example, unexpected encounters may engender marital relationships or occupational opportunities.

The importance of luck and good fortune is particularly visible in the case of innovation, namely in new product development. It is often said that a highly prescribed and standardized process leads to good products (Cooper, 1998). New products are, in this perspective, the fruit of hard work and good systems. However, the role of chance and serendipity, elements of "the unexpected", as Drucker (1985) put it, have been illustrated in theory and practice. For example, Pfizer scientists were assessing sildenafil citrate as a medication for blood pressure. They serendipitously discovered that it was effective in the treatment of a totally different problem: erectile dysfunction. This incidental discovery led to the creation of Viagra. The Viagra and the well-known example of 3M's Post-It note pads, are examples of serendipitous discovery of successful new products.

The relevance of serendipity is also familiar to management researchers. Referring to the process of theory building, Bourgeois (1979) invited researchers to take advantage of serendipity, and Weick (1989, p.519) noted that theorists tend to describe the theorizing process in rather mechanical terms, "with little appreciation of the often intuitive, blind wasteful, serendipitous, creative quality of the process". Discussions of learning with the surprising and the unexpected, are abundant in the academic research process. Davis (1971) noted that interesting theories are often discovered inadvertently.

Eisenhardt (1989, p.536) observed that “the research question may shift during the research”. Inspired by Robert K. Merton (1949), Glaser and Strauss (1967) present grounded theory as method open to a logic of discovery that accommodates serendipity. Some researchers have converted theory-testing research into theory-building research by taking advantage of serendipitous findings. Mintzberg’s influential book on the nature of managerial work is another example of a consequent project which started almost “by accident” (Martin de Holan and Mintzberg, 2004). As a final example, the label “knowledge management” came to Davenport and Prusak as an epiphany “while munching a tasty lemon square” at the Boston Athenaeum (2003, p.180). Having discussed the meaning of serendipity and its potential relevance for organizations, I now turn to the analysis of the process of serendipitous learning.

## THE PROCESS OF SERENDIPITY

In this section, I discuss a model of organizational serendipity. The model, graphically depicted in Figure 1, consists of three building blocks. The first is the set of precipitating conditions that, when present, increase the chances for serendipitous discovery. Three conditions are considered: temporal happenstance, active learning, and relationships. The second is the search for a solution for an envisioned problem. A third block is bisociation. When looking for a solution to a problem, people combine previously unrelated matrices of skills or information. This combination leads to some unexpected, serendipitous solution for another problem. Now I start a more detailed explanation of the model, starting with the precipitating conditions.

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Figure 1 about here

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**Precipitating conditions**. Three precipitating conditions of serendipity may be considered: temporal, analytical and relational (Fine and Deegan 1996). Unexpected discoveries may occur because people are in the right place at the right time. Time has been mostly researched in the organizational field as a domain of prediction and regularity, but there is another side in the relationship between time and organization: temporal happenstance is sometimes a domain of unsuspected discovery. People discover things because they were lucky to be there when something happened. The Jungian concept of "synchronicity", i.e. the occurrence of meaningful coincidences in time, may be relevant in the discovery of a career path (Guindon & Hanna, 2002), the genesis of an idea (Govier, 2003) or an opportunity for a new venture creation (Baker, Miner & Eesley, 2003).

Serendipitous discovery also involves active learning and analysis. Despite its accidental nature, people discover things by accident when they make a purposeful search effort. They may learn through analysis, intuition or improvisation (Mintzberg and Westley, 2001). In the first case, a structured process of analysis may lead to surprising findings. In the case of intuition, learning results from establishing connections that were not previously proposed. In the improvisational mode, people act in order to learn. The difference between serendipity and other forms of learning lies in the elements of surprise involved. Graebner's (2004) study on acquisitions showed that one source for creating value by serendipity was through exposure to different practices. The process may be triggered if these different practices carry some form of surprise. For example, a small firm was acquired by a large one, which viewed itself as highly

competent in new product development. To the surprise of the managers, the acquired small firm proved to be superior to the acquirer in some parts of the process. This unexpected finding was followed by the "floating" of ideas into the buyer, as one informant put it (Graebner, 2004, p.772).

Relational serendipity refers to accidental discovery as a result of social connections and interactions. One episode reported by Lovas and Ghoshal (2000, p.884) illustrates this form of serendipity. Jes Olsen, a manager at Oticon, a Danish multinational company, was dealing with a problem: the development of a microprocessor that could be small and powerful enough to fit inside a hearing aid. One evening, while having a beer with some friends from Microtonic, a firm specializing in micromechanics, Olsen mentioned the problem and "one of his friends knew of such a microprocessor, which was subsequently used in the Multifocus product line." This episode illustrates how serendipity travels in good social networks. People are willing to open up to friends, and friends with the adequate knowledge may provide unexpected solutions: "meetings and social events provide the unplanned and unstructured opportunities for the accidental coming together of ideas that may lead to the serendipitous development of new intellectual capital" (Nahapiet and Ghoshal, 1998, p.258).

The separation of the three precipitating conditions of serendipity is analytically convenient but, in practice, more than one of them may be necessary for serendipity to occur. For example, the discovery of the superiority of the acquired firm in Graebner's study, involved the three forms of serendipity. As the author indicated, timing was relevant because, due to the composition and stability of managerial positions, serendipitous value creation is more likely in early rather than in later acquisitions.

Second, there was a substantive theme under analysis, in this case the process of new product development. Third, formally established cross-organizational relationships were fundamental for the process to be ignited. As the author suggested, when cross-organizational responsibilities do not exist, serendipitous value creation may not take place.

**Search for "Problem A"**. Serendipitous discoveries may be accidental but they are not fortuitous. They involve a deliberate process of search for a solution to Problem A. When acting, the chances of learning increase. This happens because action is an important stimulus for learning. Therefore, the discovery of something unexpected involves a search process. It is the exploratory effort that creates the willingness to learn which ends up producing the unexpected discovery. As concluded by Miyazaki's (1999) research on Japanese optoelectronics firms, serendipity plays a more important role in the beginning of an exploratory effort. As a company develops its knowledge in a given area, exploitative efforts become prevalent and local search dominates.

**Bisociation**. Bisociation occurs when someone combines previously unrelated matrices of skills or information (Koestler, 1964; Smith and DiGregorio, 2002). After a period of mental incubation, matrices are related and a new way of representing a problem emerges. This bisociative process happens when unsuspected connections or hidden analogies are revealed, enabling the development of creativity. These analogies often result from serendipitous links between information sources, factual or by analogy (Foster and Ford, 2003). Kekulé's intuition of the structural formula for the benzene ring resulted from seeing imaginary snakes in the fireplace, one of which formed a ring by biting its tail (McKelvey, 2002). The association between snakes of fire and the

benzene ring is demonstrative of the potentially strange paths and the lack of analytic logic of serendipitous discovery. Individuals engaged in bisociation may discover unexpected things due to their new ways of approaching a problem. These new ways of seeing have been labeled differently. “Flashes of insight” and “illuminations” are two examples (Mintzberg and Westley 2001; Ireland et al 2003).

When the organization facilitates the circulation of information and the sharing of people’s knowledge, novel ideas emerge more easily. Hence the interest for the notion of social capital: firms with higher social capital tend to facilitate knowledge creation and intuitive discovery in bisociative ways (Nahapiet and Ghoshal, 1998). People may only imagine the solution to the problem they were dealing with for a long time, when they contact experts in different fields (Lovas and Ghoshal, 2000) that facilitate bisociative efforts.

**Unexpected solution for “Problem B”**. When engaged in search processes, organizational members experiment with new solutions. More often than not, they may be envisioning a reutilization of current knowledge (March, 1991). When they do distant search (Katila and Ahuja, 2002), however, i.e., when they try to move away from current knowledge, they increase the chances of serendipitous discovery. If this deliberate search for new knowledge is combined with deep search, i.e., with an in-depth revisit of previous knowledge, the likelihood of unexpected discoveries increases. In other words, deep knowledge may produce unexpected findings when applied to new domains. 3M scientists discovered the idea for Post-It notepads by accident but they were looking for something else; Pfizer scientists discovered a use for the ingredient in Viagra while trying to solve problems of blood pressure, and so on.

Having discussed the process of serendipity in organizations, I now turn to its management. In the strictest sense, serendipity cannot be managed, but some steps may be made if a firm intends to open its doors to good fortune.

## CAN SERENDIPITY BE MANAGED?

Serendipitous discovery may be facilitated but it is an emergent process. Organizations may try, for example, to anticipate problems and neutralize them beforehand. But they may also accept that planned interventions will not preclude the adoption of serendipitous unexpected discoveries. In their work on cognitive repairs, or organizational practices that compensate for individual shortcomings, Heath, Larrick and Klayman (1998) contrasted two distinct ways that lead to the creation of cognitive repairs. Some repairs originate in a top down approach: they are deliberately designed and implemented by managers or outside professionals like consultants. Others emanate from the bottom up, resulting from unplanned discoveries made while doing the work. Action is a facilitator of learning and people may act in order to learn and discover (Weick, 1990).

Being an emergent process, serendipity, strictly speaking, cannot be managed. What organizations can do is create conditions for it to emerge. In other words, they can increase the likelihood of serendipity, without guaranteeing the results. A mobile-phone application has been created to improve workplace collaboration through the facilitation of chance encounters among people “who don’t – but should – know each other” (Eagle, 2004, p.10). The name of the application: Serendipity. The creation of the Serendipity software application suggests that organizations can try to generate

serendipity – not necessarily by accident. They can also act in order to increase the chances of occurrence of these fortuitous happenings, and facilitate the occurrence of the most convenient ones. Below, I present what companies can do about the four elements in the model presented in the previous section.

**Precipitating conditions.** As noted by Bandura (1998), people can make chance happen if they pursue an active life that increases the number of fortuitous encounters. According to the proactive sociocognitive view, chance favors inquisitive, venturesome, and persistent people (Austin, 1978). As such, companies favoring an action-oriented approach to problem-solving may facilitate serendipitous discovery. In contrast, bureaucratic structures may inhibit the exploration of accidental discoveries (Child and McGrath, 2001). The informal interaction between people with different types of knowledge may also be necessary and facilitated by gatekeepers (Foster and Ford, 2003). Physical proximity, the creation of moments of contact between workers of different specialties and effective gatekeeping, may thus facilitate accidental discoveries. This can be illustrated with Southwest Airlines' "Mind the Gap" program, which consisted in the creation of cross-functional teams across the entire organization, in an effort to foster closer teamwork and innovative ideas (Ganesan, 2004).

**Problem A.** Future research is necessary to explore the relationship between search processes and serendipitous discovery, but it seems plausible to hypothesize that the most favorable combination of search depth and search scope is deep-distant search (Katila and Ahuja, 2002). This process, utilizing the organization's stock of knowledge but redirecting attention, combines expertise with curiosity. This possibility is aligned with Shane's (2000) finding that entrepreneurs tend to discover opportunities related to

the information they already possess. Therefore, the application of the existing stock of knowledge to new domains may be preferable to the development of new knowledge in different domains.

**Bisociation**. In segmented cultures, “thought worlds” tend to dominate (Dougherty, 1992). Information flows less freely and people become more and more focused on their own jobs. This diminishes the possibilities for bisociation to occur. As such, cross-functional teams, boundaryless structures and interdepartmental communication, may improve the chances of bisociation. Exposure to different knowledge and practice (e.g., in conferences, benchmarking) may also create an environment favorable to the “cognitive twist” associated with bisociation.

Communication with people from different backgrounds facilitates efforts of bisociation. The changes introduced by some organizations in their human resource function, are trying precisely to accommodate this new role: HR professionals are increasingly viewing their work as one of connecting and facilitating the circulation of knowledge in order to promote further knowledge creation, rather than aiming to accomplish the traditional HR functions (selection, development, compensation; see Lengnick-Hall and Lengnick-Hall, 2003).

**Unexpected solution**. The goodness of accidental discoveries may not be accepted without question. Several reasons account for the difficulties of dealing with the fruits of serendipity in the organizational context. First, there is the need of preparation of mind to recognize the serendipitous when it is encountered (Rosenman, 1988). Second, in some organizations legitimacy may be an issue. As discussed before, the fact that a

discovery was made inadvertently, may render it “clandestine”. As such, serendipitous discoveries may need idea or product “champions” even more than planned discoveries. Third, if these discoveries take an organization out of its planned path, they may involve an effort of “forgetting” that may be difficult (Martin de Holan and Philips, 2004), especially for those committed to the previous course of action, who may not appreciate the de-railing of their plans by an accidental finding.

## CONCLUSION

In his literature review of organizational learning, Huber (1991) observed that few research efforts have been devoted to unintentional learning. This paper contributes to this field by analyzing a process of unintentional learning. Chance, luck, and accidental discoveries are often presented as the result of the random combination of multiple factors that are beyond the company’s control (e.g., Barney, 1986). Recent research, however, suggests that the discovery of strategic opportunities is often a matter of serendipity (Denrell, Fang and Winter, 2003) and that strategic decisions, such as internationalization, may be driven by a high degree of serendipity (Meyer and Skak, 2002). In this paper, I tackled the meaning of chance and luck involved in the process of serendipitous discovery – a form of unintentional learning. The review of the literature led to the construction of a model of serendipity that suggests that chance tends to favor only prepared organizations. In other words, organizations can cultivate and nurture the factors that lead to serendipity. The paper is an invitation for management scholars to develop further research on the topic. The dominant logic of organization and management studies is a mechanical one, where combinations of routine and uniform processes tend to be repeated. I suggest here a different perspective: if we take

organizations as changing entities, then serendipity may have a role in explaining organizational becoming (Tsoukas and Chia, 2002).

Despite the relevance of the notion of serendipity for organizational theory and management practice, there are difficulties associated with it. One of these difficulties is detectable in Santos et al.'s (2004) piece of advice: because knowledge is sometimes discovered by accident, managers should "constantly be on the lookout for unexpected sources of knowledge" (p.35). The tricky part of this well-intentioned suggestion is that unexpected sources of knowledge are by definition impossible to locate. Therefore organizations cannot depend on serendipity and unintentional learning. Nevertheless, serendipitous discoveries may result from intentional exploratory search processes. This helps us in understanding why some organizations are luckier than others.

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Figure 1: The serendipity process